



Increasing the reach: Involving local Muslim religious teachers in a behavioral intervention to eliminate urogenital schistosomiasis in Zanzibar



Mike Celone^a, Bobbie Person^{b,*}, Said M. Ali^c, Jameelat H. Lyimo^a, Ulfat A. Mohammed^a, Alippo N. Khamis^a, Yusra S. Mohammed^c, Khalfan A. Mohammed^a, David Rollinson^d, Stefanie Knopp^{d,e,f}

^a Zanzibar Neglected Tropical Diseases Program, Ministry of Health, P.O. Box 236, Zanzibar Town, Unguja, United Republic of Tanzania

^b Consultant of the Schistosomiasis Consortium for Operational Research and Evaluation, University of Georgia, Athens, GA, United States of America

^c Public Health Laboratory – Ivo de Carneri, P.O. Box 122, Chake Chake, Pemba, United Republic of Tanzania

^d Wolfson Wellcome Biomedical Laboratories, Department of Life Sciences, Natural History Museum, Cromwell Road, London SW7 5BD, United Kingdom

^e Swiss Tropical and Public Health Institute, Socinstrasse 57, CH-4002 Basel, Switzerland

^f University of Basel, Petersplatz 1, CH-4003 Basel, Switzerland

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ABSTRACT

In Zanzibar, United Republic of Tanzania, Madrassa schools are influential institutions, where children and adults can learn about the interpretation of the Koran. We aimed to explore the involvement of Madrassa teachers for behavior change interventions in a randomized operational research trial designed to investigate the impact of multiple approaches to eliminate urogenital schistosomiasis transmission from Zanzibar. Madrassa teachers performing in the 30 communities of the behavior change study arm were trained in new interactive and participatory teaching methods by the local behavioral team and provided with schistosomiasis-teaching tools for teaching about transmission and prevention in their Madrassa. In July 2014, in a qualitative research study, we conducted 25 semi-structured interviews with Madrassa teachers to find out how they perceived their involvement in interventions against schistosomiasis. In 2014, 5926 among the 8497 registered Madrassa students in 30 communities on Unguja and Pemba islands received health education and participated in interactive behavior change exercises about schistosomiasis. Madrassa teachers reported that they valued their inclusion in the study and the opportunity to educate their students about schistosomiasis transmission, prevention, and treatment. They also perceived personal and community benefits as a result of their training and strongly supported the inclusion of additional Madrassa teachers in future intervention activities. Madrassa teachers are influential in the Zanzibari society, and hence are important change agents within our community-level behavioral intervention. They might constitute an untapped resource that can help to expand and increase acceptance of and participation in schistosomiasis and other neglected tropical disease control activities in African Muslim communities.

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Abbreviations: EKBB, Ethikkommission beider Basel; HCD, Human Centered Design; HIV, Human Immunodeficiency Virus; MDA, mass drug administration; NCEZID, National Center for Emerging Zoonotic Diseases; SCORE, Schistosomiasis Consortium for Operational Research and Evaluation; ZAMREC, Zanzibar Medical Research Ethics Committee; ZEST, Zanzibar Elimination of Schistosomiasis Transmission.

* Corresponding author at: 2540 Windhoek Place, Dulles, Virginia 20189, United States of America.

E-mail address: bobbieperson@gmail.com (B. Person).

1. Introduction

Schistosomiasis imposes a significant health burden on people living in tropical and sub-tropical regions of Africa, Central and South America, and Asia and globally more than 230 million people are infected (Gryseels et al., 2006; Steinmann et al., 2006; Vos et al., 2012). On the Zanzibar islands belonging to the United Republic of Tanzania, urogenital schistosomiasis caused by *Schistosoma haematobium* has been highly prevalent in the past century (McCullough and Krafft, 1976; Savioli et al., 1989; Mgeni

et al., 1990). However, rigorous schistosomiasis control interventions and likely also an increasing socio-economic standard and improved access to water and sanitation have resulted in a decrease of cases and an overall prevalence of below 10% in school-aged children (Stothard et al., 2009; Guidi et al., 2010; Knopp et al., 2013a,b). In 2011, the Zanzibar Elimination of Schistosomiasis Transmission (ZEST) alliance was formed with the aims to eliminate urogenital schistosomiasis as a public health problem from Pemba island and to interrupt transmission of urogenital schistosomiasis in Unguja island (Knopp et al., 2012). With the support of the Schistosomiasis Consortium for Operational Research and Evaluation (SCORE) a randomized operational research trial is being conducted in 45 administrative areas (shehias) on Unguja and Pemba, respectively, from 2011 until 2017, to assess the effectiveness of three schistosomiasis control interventions: (i) mass drug administration (MDA) with praziquantel; (ii) MDA and snail control; and (iii) MDA and behavior change activities (Knopp et al., 2012, 2013a).

The behavior change component in arm iii is guided by the Human Centered Design (HCD) methodology, in which the researcher works in partnership with community members to design a solution to a specific problem through a participatory process. Through the HCD approach applied in Zanzibar in 2011, four major components were identified as important for the schistosomiasis behavior change intervention (Person et al., 2016b): (i) training schoolteachers, coaches, and other authorities in local public primary schools and religious schools in new interactive and participatory teaching methods in order to teach students about schistosomiasis; (ii) installing locally designed male and female urinals near contaminated natural open freshwater bodies where children congregate for use by children; (iii) providing safe play activities and play structures for children that are an alternative to playing in contaminated freshwater sources; and (iv) providing laundry washing platforms in areas located a short distance from local safe water sources to prevent children from washing clothes in contaminated freshwater bodies.

The HCD process also identified Madrassas, religious educational institutions, as important community venues, where children can be reached for health communication messages and behavior change activities. On the Zanzibar islands, more than 99% of the population is Muslim (US Department of State, 2014). As a result, religious education through a Madrasa is compulsory for most Zanzibari children and Madrasa teachers are influential in the community. Although the primary role of Madrasa teachers is Islamic education, teachers also engage students in a wide variety of topics including health and hygiene (Boyle, 2004; Blanchard, 2008). Hence, Madrassas and their teachers were included within the behavioral school intervention component. Madrassas are complementary to government schools and many children in Zanzibar attend the two schools simultaneously. Hence, health education and behavior change activities provided within a Madrasa may overlap with similar activities provided in a government school.

The qualitative research study presented here is a process evaluation of a Madrasa teachers training, which was conducted in 2014 as part of the educational component for the behavior change interventions implemented in our randomized trial. This process evaluation study explored the knowledge, attitudes, and experiences of Madrasa teachers who have been trained in schistosomiasis prevention and control intervention activities and are currently participating in the SCORE behavioral study component in 15 shehias on Unguja and Pemba, respectively. Future studies will reveal the impact of the behavior change interventions on schistosomiasis transmission in Zanzibar.

2. Methods

2.1. Ethical considerations

This qualitative research inquiry was conducted in May–July 2014 as part of process evaluation activities approved by multiple institutional and ethical review boards for the overall operational research trial, and included ethical approval from the Zanzibar Medical Research Ethics Committee in Zanzibar, United Republic of Tanzania (reference no. ZAMREC 0003/Sept/011), the “Ethikkommission beider Basel” (EKBB) in Switzerland (reference no. 236/11), and the Institutional Review Board of the University of Georgia in Athens, Georgia, United States of America (project no. 2012-10138-0). Verbal informed consent was obtained from every Madrasa teacher participating in in-depth interviews.

2.2. Study setting

This qualitative study was conducted on Unguja and Pemba islands between May and July 2014. The Zanzibar archipelago is part of the United Republic of Tanzania and consists of the two main islands of Unguja and Pemba with an estimated resident population of 1.3 million (OCGS, 2013). Islam is the predominant religion and Kiswahili is the predominant language. Both Unguja and Pemba are divided into districts: six districts on Unguja and four districts on Pemba. On Unguja, urogenital schistosomiasis is endemic in all except the South district; on Pemba, all four districts are endemic for the disease. The districts are sub-divided into administrative units called shehias. Each shehia has one local, elected leader called a sheha, who is involved in political and administrative issues at the community level.

2.3. Training of madrasa teachers

The behavior change teams on Unguja and Pemba consist of four local research assistants who are responsible for the day-to-day activities within the behavioral intervention. In order to participate in the behavioral intervention, Madrasa teachers were expected to participate in a teacher training designed and co-taught by the senior behavioral scientist and co-investigator of the study. The seminar activities were meant to engage the teachers in interactive and participatory activities, instead of lecturing and rote memorization. Madrasa teachers from the 15 shehias belonging to the behavioral study arm on Unguja and Pemba, respectively, attended three, daylong interactive training sessions at the main office of each behavior change team. The teacher training sessions, led by the senior behavioral scientist and the behavioral teams, included topics on the life cycle, transmission, symptoms, and treatment of schistosomiasis. The teacher training sessions were designed according to the principles of Adult Learning Theory (Taylor and Hamdy, 2013). The sessions also included new participatory teaching methods, tools, materials, and games. At the end of the training, the teachers were provided with unique teaching tools designed in partnership with the community during the HCD process, to take back to their classrooms and to use in the education of their students. As shown in Fig. 1, teaching tools included a snail board (showing the intermediate snail host *Bulinus globosus* that transmits the parasite and one other snail species that does not support the parasite), a laminated picture of the blood flukes (male and female schistosomes) infecting humans, a picture of the life cycle drawn by the teachers themselves, and a flip chart (a community designed, interactive tool in Kiswahili that facilitates education on risk factors, transmission, treatment, and prevention of schistosomiasis). After receiving the training, teachers were requested to return to their classrooms and train their students about schisto-

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